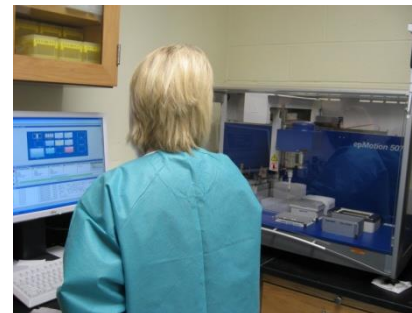


ISU VDL's Role in HPAI Response

Rodger Main, DVM, PhD
Professor & Director
ISU VDL



ISU VDL Veterinary Diagnostic Laboratory
College of Veterinary Medicine • Iowa State University



ISU-VDL is part of the ISU College of Vet Med



ISU VDL Veterinary Diagnostic Laboratory
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ISU-VDL → Who We Are Today

- Total ≈ 135 People
 - 25 Faculty
 - 110 Technical Staff
- Full Service & Fully Accredited Laboratory
- Veterinary Diagnostic Medicine
 - Pathology
 - Virology and Molecular Dx
 - Bacteriology
 - Serology/Immunology
 - Toxicology & Nutrition
 - PhAST (Clinical Pharmacology)
 - Epidemiology
 - IT





IOWA STATE UNIVERSITY

Veterinary Diagnostic Laboratory

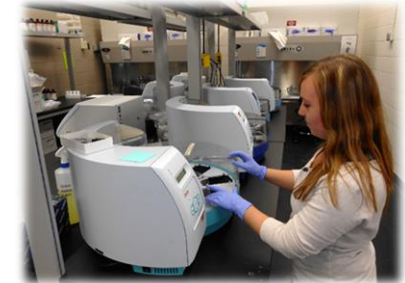
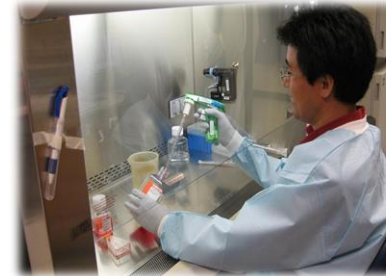
Preeminent Food Animal Veterinary Diagnostic Laboratory

Comprehensive Diagnostic Service, Teaching, and Applied Research

- Create = New Knowledge & Capabilities
- Share = Students, Practitioners, & Stakeholders
- Apply = Providing World Class Diagnostic Services

Processing > 70,000 cases/year from livestock producers
Applying world-class technology to solve real-world problems



[illegible]

Processing > 70,000 cases/year from livestock producers for across US
Applying world-class technology to solve real-world problems

ISU VDL Diagnostician receives the case from the local veterinarian

> 70,000/year

Select diagnostic tests based on history and gross lesions

Serology

Molecular

Histopathology

Bacteriology

Toxicology
&
Nutrition

Virology

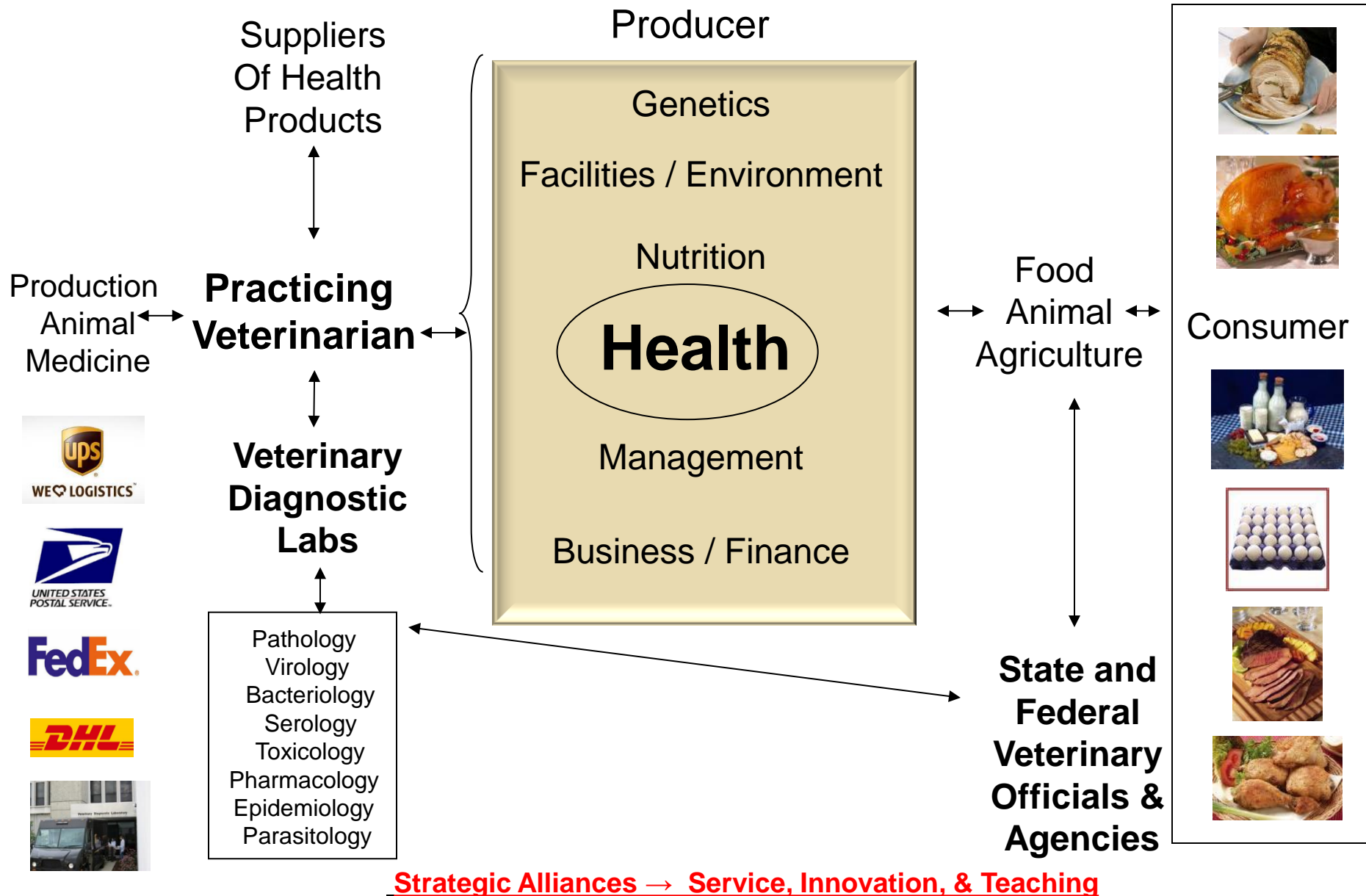
Clinical
Pharmacology

Results coordinated to arrive at a diagnosis

Transmit diagnosis to and assist local veterinarian with intervention strategies and establishment of best practices

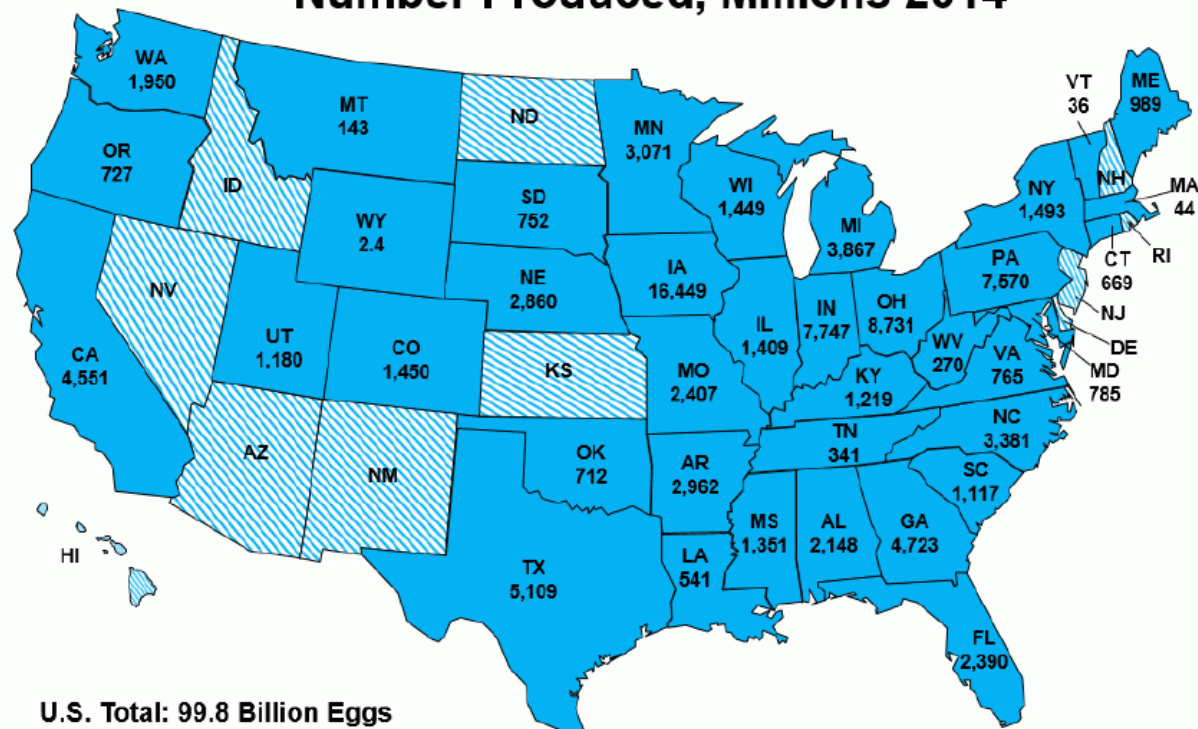
Informs teaching and research programs

Network of Interdependent Relationships to Improve & Protect Food Animal Agriculture





Annual Egg Production by States Number Produced, Millions 2014



U.S. Total: 99.8 Billion Eggs
 ■ 97.4 Billion Eggs, 98% of U.S. Total
 ▨ All Other Production States

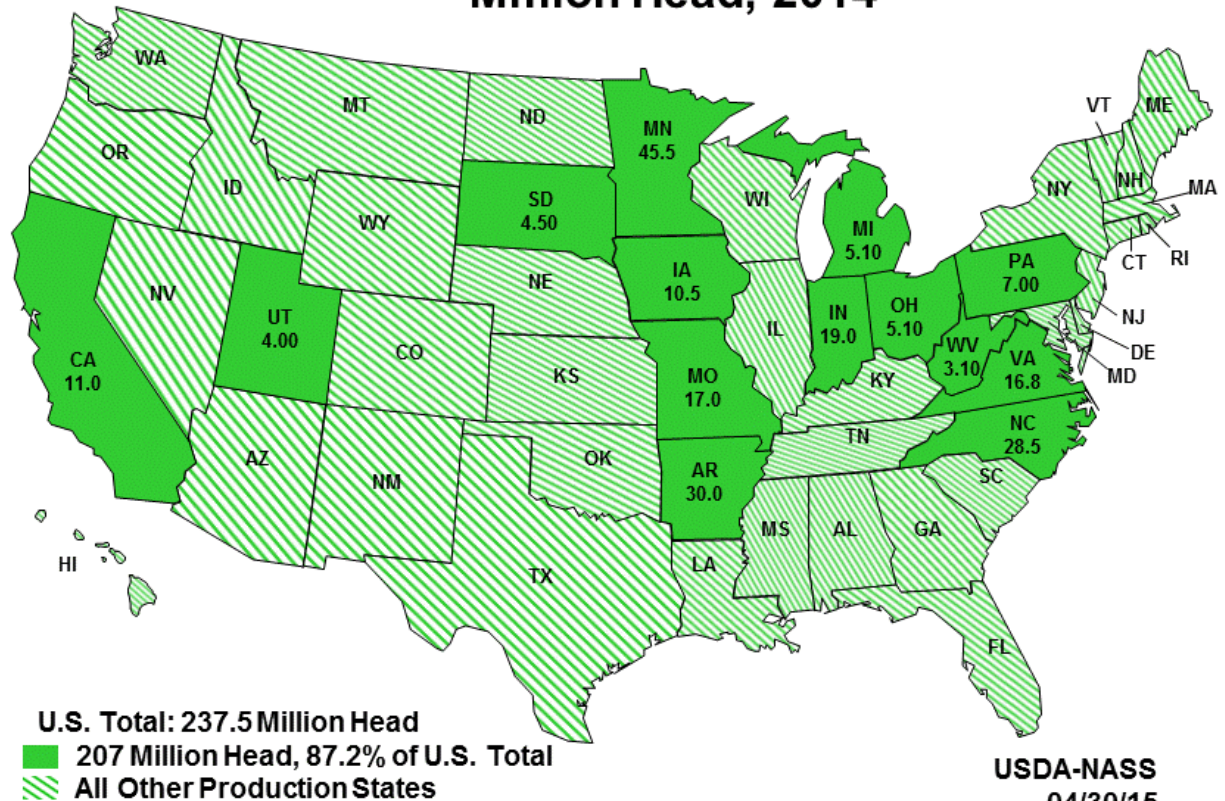
USDA-NASS
04/30/15

Iowa = Top Egg Producing State in US (16.5% of US Production)
 ≈ 60 Million Layers & 16.5 Billion Eggs prior to HPAI

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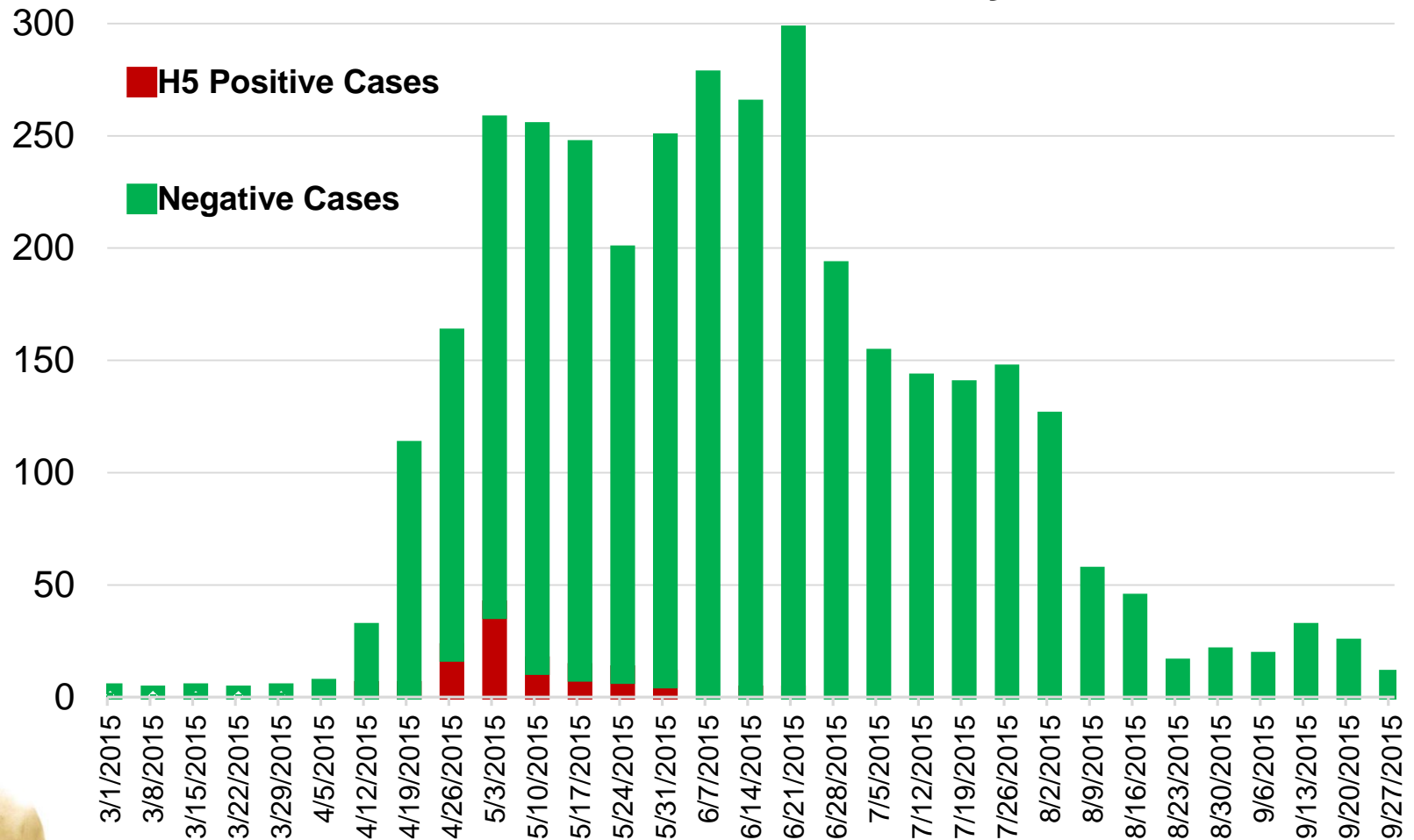
Turkeys: Number Raised by State Million Head, 2014



Iowa: Ranks 8th among States for Turkey Production
 Produces \approx 10.5 Million/Year and Processes \approx 13.5 Million/Year

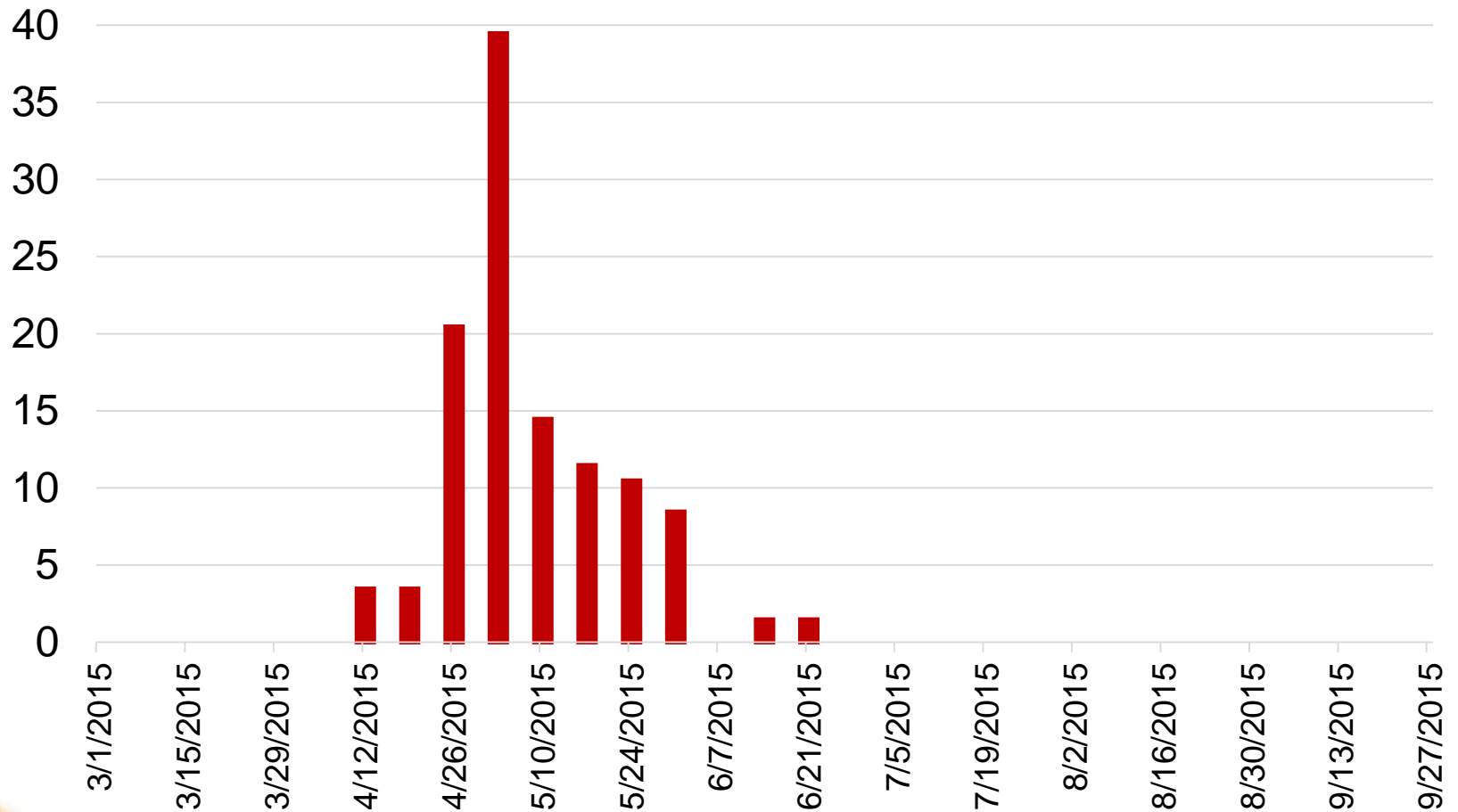
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ISU VDL AIV PCR Cases by Week



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ISU VDL AIV H5 Positive Cases by Week



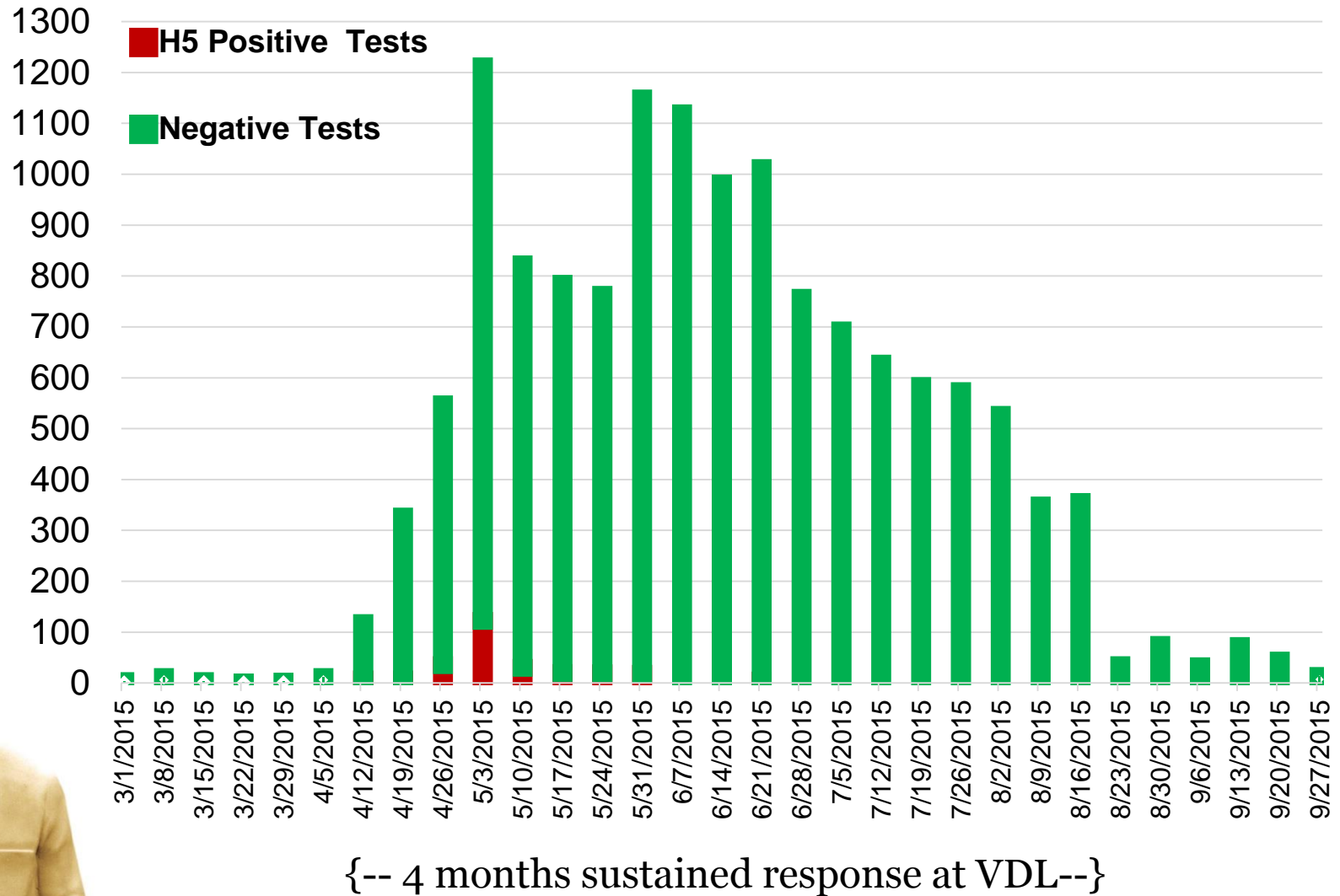
{10 week HPAI Outbreak in IA}

Diagnostic Case Submissions \neq Number of Infected Premises

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ISU VDL AIV PCR Tests by Week



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Summary HPAI Infected Premises

- 35 Commercial Turkey Farms
- 22 Commercial Table Egg Layer Farms
- 13 Commercial Table Egg Pullet Farms
- 1 Commercial Breeder Flock
- 5 Backyard Producers
- 1 Commercial Mail Order Breeder Operation



• **Total = 77 HPAI Infected Premises**

Data courtesy of:
Dr. David Schmitt, State Veterinarian
Iowa Department of Agriculture and Land Stewardship



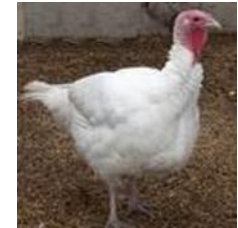
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2015 Iowa Affected Poultry



Type	Animals Indemnified
Commercial Table Egg Layers	25,489,084
Commercial Table Egg Pullet	5,609,474
Commercial Turkey Meat	1,146,586
Commercial Breeder	59,077
Backyard Producer	9,284
Total	32,313,505



Data courtesy of:
Dr. David Schmitt, State Veterinarian
Iowa Department of Agriculture and Land Stewardship

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What could VDL improve its role in support HPAI preparedness / response ?

Early Detection, Rapid Response, &
Effective Communication (Seamless, Timely, Clear)

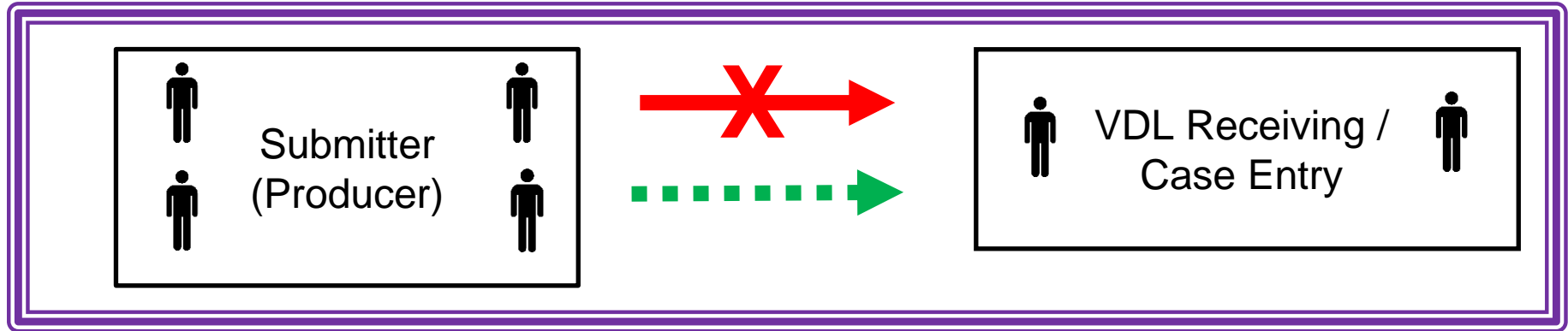
- ☑ Competency of Personnel & VDL Systems
- ☑ Quality of Test & Results
- ☑ Sensitivity of Assay
- ☑ Testing Capacity
- ☑ Turn-around Time
- ☐ Quality of Information in VDL Record
 - Complete, Consistent, Traceable, Fit for Digital Transmission



AIV Diagnostic Record Information Flow

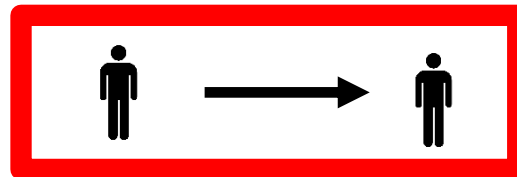
———— Human Readable

■■■■■ Digital Code

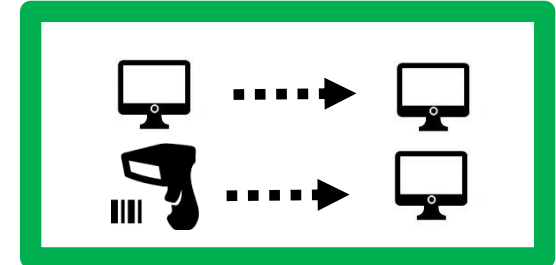


- **Premises Level Data On VDL Submission Form Case Entry**

- Completeness
- Consistency
- Traceability
- Connectivity



Less



More

Goal = 100% of Iowa Commercial Poultry Clients Digital by March 1, 2016



Yuko Sato
Poultry Diagnostician



Katie Woodard
Client Outreach/Education

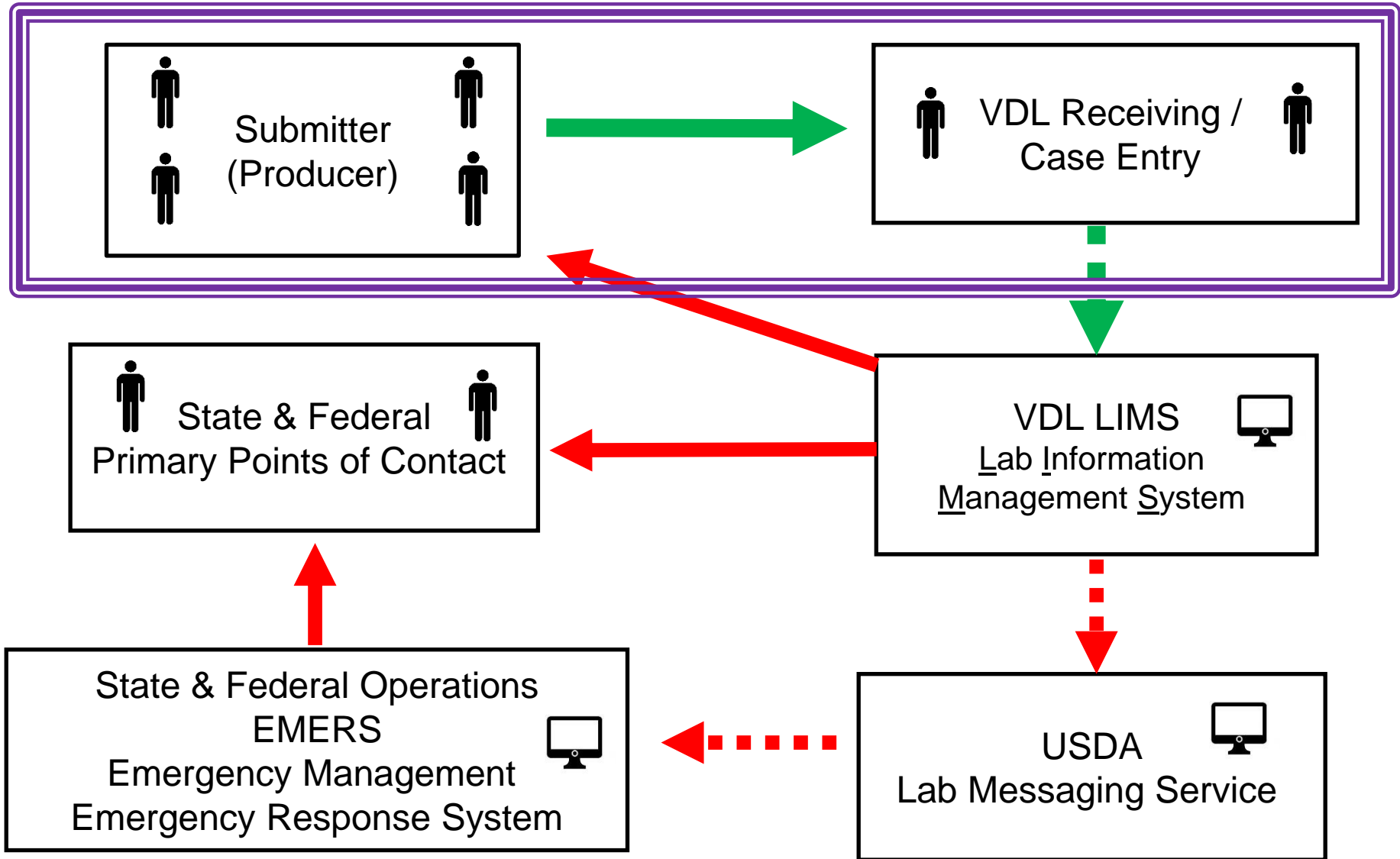


Wendy Stensland
NAHLN Program Mgr

AIV Diagnostic Record Information Flow

———— Human Readable

■■■■■ Digital Code



5 W's = Who, What, When, Where, and Why

Sustained responses to large-scale emerging disease events: “Life Is Not A Drill”



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Achieving Stakeholder Expectations

- Competent VDL Personnel & Infrastructure
- Quality Assays & Test Results
- Turn-Around-Time (Same Day/Overnight)
- Electronic Distribution of Results
- Cost Effective Service
- Sustain Continuity and Protect Their Business





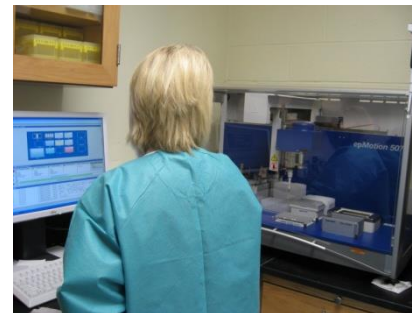
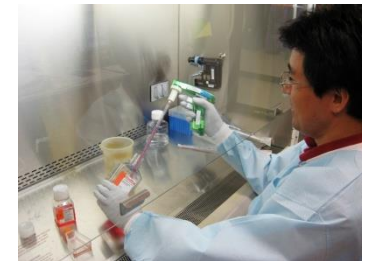
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Questions ?

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